

HEATING AND LIGHTING

THE SUN AND THE WEATHER

THE SUN'S DIAMETER IS 100 TIMES GREATER THAN THE EARTH'S.

SOLAR PANELS

1

DISTANCE FROM THE EARTH TO THE SUN: 93 MILLION MI.

Like hundreds of millions of other stars, the Sun is a burning hot ball of gas made up mostly of hydrogen and helium. Its heart (the core) is a kind of thermonuclear bomb* that explodes over and over again. This is how the Sun produces all its energy. The energy, in the form of light, travels through space to heat and illuminate the Earth.

HEATING OUTAGE

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According to some scientific theories, the Earth has turned into a ball of ice at least three times.

ABOUT 2.4 BILLION YEARS AGO: the Huronian glaciation.
720-660 MILLION YEARS AGO: the Sturtian glaciation.
ABOUT 640 MILLION YEARS AGO: the Marinoan glaciation.

Scientists think these "heating failures" were caused by the spread of tiny bacteria that depleted greenhouse gases* and the atmosphere.

THE LIGHTING

4

67,000 MPH: THE AVERAGE SPEED THE EARTH REVOLVES AROUND THE SUN.

This revolution* determines the seasons, the major climate regions, and how long night and day last.

365 DAYS: THE TIME IT TAKES THE EARTH TO GO AROUND THE SUN.

584 MILLION MI.: THE DISTANCE THE EARTH TRAVELS TO GO AROUND THE SUN.

THE THERMOSTAT

2

Flow-to guide

ATMOSPHERE

The Earth is surrounded by an atmosphere. Like a blanket, it retains the Sun's heat. This process is known as the greenhouse effect. Because of it, the average temperature of our planet is 59°F. Without the atmosphere, it would drop to about -1°F, and the Earth would be covered in ice!

2018 WAS ONE OF THE WARMEST YEARS SINCE 1880. THAT YEAR, THE EARTH'S TEMPERATURE WAS 1.5°F hotter than average. That's not much, but it's enough to disrupt the environment.

27 MILLION°F: THE TEMPERATURE OF THE SUN'S CORE.

ON THE SURFACE IT'S "ONLY" 9,932°F.

Solutions

According to scientists' predictions, the Earth's temperature could increase by 5°F-9°F by 2100. This would have catastrophic effects. Because of this, most countries have made a commitment to limit the production of greenhouse gases*. Fortunately, there are a lot of solutions: reduce transport, recycle more and burn less waste, and develop cleaner energy sources (solar, wind, etc.) so as to rely less on fossil fuels* (oil, coal, etc.).

Malfunctioning

The Earth naturally emits different greenhouse gases* (water vapor, methane, carbon dioxide, etc.) that help it maintain its average temperature. But human activities (burning fossil fuels*, driving cars, manufacturing, raising livestock, etc.) also produce a lot of greenhouse gases*. When the concentration of these gases increases in the atmosphere, the Earth's temperature goes up and the climate changes. This leads to drought, famine, fires, floods, hurricanes, cyclones, water shortages, the melting of glaciers, a rise in sea levels, and a mass extinction of species. These are some of the main effects of global warming*.

2019 → 2100 +5°F-9°F

ADJUSTABLE LIGHTING

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Six months

Between March and September, the Sun shines all day and night on the North Pole, and the same phenomenon occurs at the South Pole between September and March.

ITS CALLED THE POLAR DAY: THE SUN NEVER SETS!

Between nine and sixteen hours

For countries in the Northern Hemisphere (the United States, Japan, etc.), the length of the day varies with each season. Days get longer in summer, with up to 16 hours of light on the summer solstice (June 21). Then the days grow shorter in winter, with only nine hours of Sun on the shortest day of the year, the winter solstice (December 21).

Twelve hours

The equator is an imaginary line that runs around the middle of the Earth at the same distance from both poles. Gabon, Indonesia, and Ecuador are among about 10 countries on this line. Day and night always last the same amount of time here, with 12 hours of light all year round, in every season.

THE SMOKE DETECTOR

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Transport, heating, and manufacturing all release gases, heavy metals, and dust. These materials, which are harmful to our health, are present in the air we breathe. As a result, 1 in 10 deaths worldwide are caused by respiratory disease (lung cancer, asthma, etc.).